



Innovation in Climate INNO EDU CO₂ Change Education

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School Science e-Learning ONE HEALTH: e-InnoEduCO₂

ERASMUS+ KA2 Strategic Partnership

Ref. N°. 2020-1-ES01-KA226-SCH-095765

Consortium:



Concello de Outes
GALICIA, SPAIN



Universidade de
Santiago de Compostela
GALICIA, SPAIN



Fundación Pública Galega
Centro de Supercomputación de Galicia
GALICIA, SPAIN



Universidade de Aveiro
PORTUGAL



Agrupamento de Escolas
de Aveiro
PORTUGAL



UNIVERSITATEA
„ALEXANDRU IOAN CUZA”
din IAȘI
Universitatea
Alexandru Ioan Cuza din Iași
ROMANIA



XXVI Liceum Ogólnokształcące
POLAND

Nie wstydz się mówienia
tworzenia
dorastania

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WHAT IS SCHOOL SCIENCE e-LEARNING ONE HEALTH?

Presented with the acronym e-InnoEduCO₂, this is a European project that was the most highly valued out of those submitted in Spain in the Erasmus+ KA226 (Strategic Innovation Support Partnerships) extraordinary call for innovation in the field of School Education summoned in September 2020 within the Erasmus+ 2020 programme.

It is a STE(A)M (Science, Technology, Engineering, Arts & Mathematics) project that enables students to develop innovation-related skills and competencies to compensate for barriers and deficiencies resulting from COVID-19. It meets the post-pandemic need to renew commitment to the SDGs — ensuring that all young people have the opportunity to succeed in school and develop knowledge, skills, attitudes and values that will enable them to contribute to society in terms of ecological recovery — addressing educational responses to the climate change crisis and heeding the UN's call to address the 2021-2030 Decade of Ocean Sciences for Sustainable Development. It seeks to do all this by reinforcing with ICTs the synchronous and asynchronous planning of experimental classes that COVID-19 made impossible.

It has a budget of EUR 251,305.00 (100 % funding).



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WHAT ARE THE OBJECTIVES OF e-InnoEduCO2?

E-InnoEduCO2 seeks to achieve **two general objectives**:

- **Compensate for the barriers, deficiencies and constraints resulting from the COVID crisis**, as identified in the OECD's *The impact of COVID-19 on Education — Insights from Education at a Glance 2020 report* (Andreas Schleicher) in order to **promote an experimental school curriculum based on digital learning through the development and implementation of e-lab and e-eco models linked to augmented reality**, which enable geolocalized uploading of data to ecosystems in the field and laboratory in different European oceans.

- **Strengthen the capacity of school education institutions to provide the inclusive digital science education of quality**, also responding to the Commission Recommendation (EU) 2018/790 of 25 April 2018 on boosting STE(A)M competences for unlocking their potential, transferring knowledge and fostering a culture of innovation and sustainable development across society and at all levels, starting at a school age.



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In order to achieve these two general objectives, the following **specific objectives** are proposed:

1. To extend **e-learning laboratory practices** to the whole educational community, enabling the development of experimental teaching-learning processes in the field and in the laboratory, with the training potential of quality, using more accessible virtual, multimedia or telematic methodologies.

2. To develop **experimental designs** that allow scientific practices to be followed telematically, without losing the potential for observation and enquiry inherent in field and laboratory experiments.

3. To strengthen the **links between scientific research and society through creative scientific expression and the development of ICT resources and innovative and attractive artistic resources** for the transfer of scientific knowledge in the educational environment and to society.

4. To raise awareness of the **links between global change and climate change through sampling activities as well as simulation and reflective laboratory practices** following the WHO's One Health approach.



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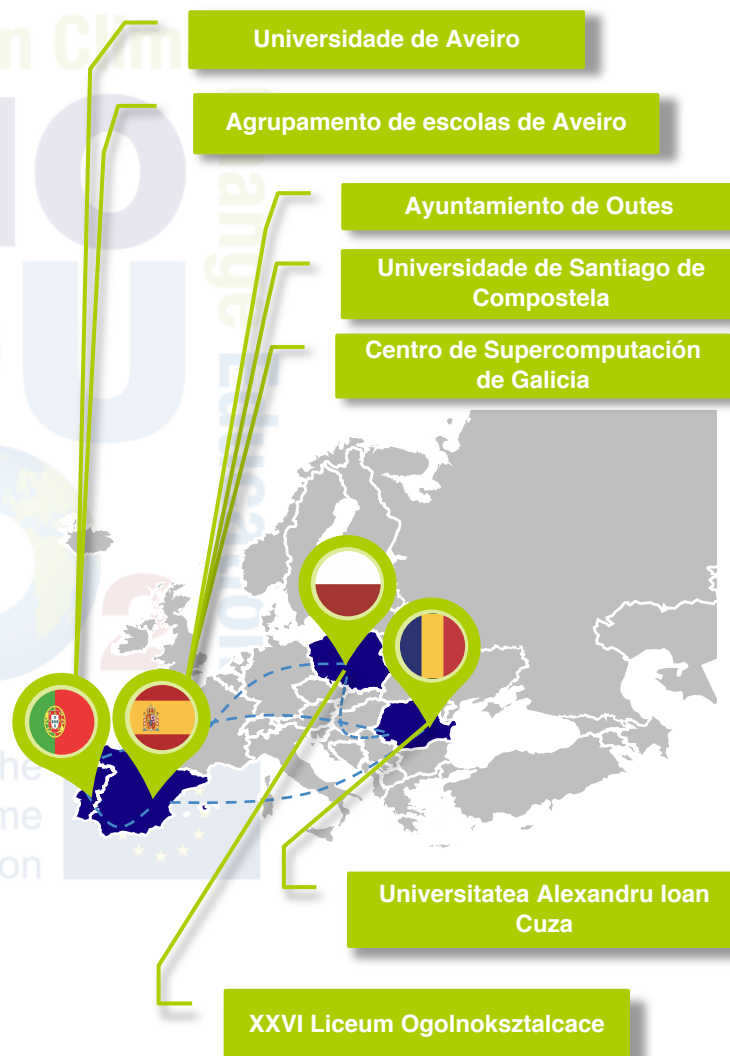
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WHO ARE THE CONSORTIUM'S MEMBERS AND WHAT ARE THE PROFILES AND INTENDED TARGETS?

E-InnoEduCO₂ will be developed by a consortium consisting of:

- **Ayuntamiento de Outes** (project lider) – SPAIN
- **Universidade de Santiago de Compostela** – SPAIN
- **Fundación Pública Gallega Centro Tecnológico de Supercomputación de Galicia** – SPAIN
- **Universidade de Aveiro** – PORTUGAL
- **Agrupamento de Escolas de Aveiro** – PORTUGAL
- **XXVI Liceum Ogólnokształcące** – POLAND
- **Universitatea Alexandru Ioan Cuza** – ROMANIA

This strategic multisectoral partnership for educational innovation aims to provide the inclusive digital education of quality, through a STE(A)M-ICT e-learning pedagogical model, in order to compensate for the shortcomings of the EU in the COVID-19 era in telematic school education in school science experimentation.



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The **target groups** are:

- Teachers
- Experts and organisations linked to the field of education
- Secondary education students.

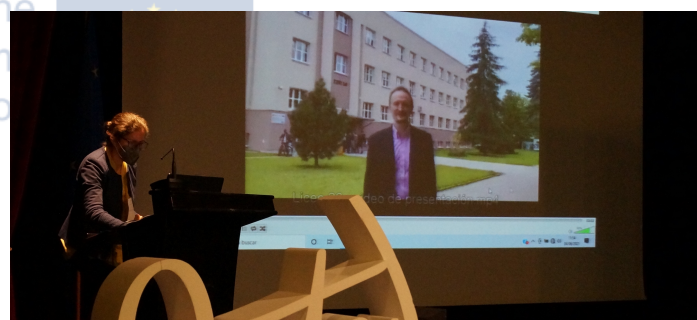
Concello de Outes (Outes Town Council) is leading the project. It is a local administration with a strong commitment to the educational network of its territory and to the sustainable development of its municipality. It will have direct access to school participants through non-formal partners such as the secondary schools IES Virxe do Mar and IES Poeta Añón.

The three universities are complementary. **Universidade de Santiago de Compostela** (specialising in the field of Pedagogy and Didactics), **Universidade de Aveiro** (specialising in the use of technologies for scientific dissemination) and **Universitatea Alexandru Ioan Cuza** (specialising in ecological research in bioindicators of pollution, in statistical analysis and in graphic representations in Ecology studies) are reference universities in their commitment to educational excellence, promoting pedagogical innovation based on learning technologies and the STE(A)M approach.

Centro de Supercomputación de Galicia is a centre specialising in the application of high performance computing and communications. The school sector is represented by

Agrupamento de Escolas de Aveiro — a professional association linked to a cluster of schools — and by **XXVI Liceum Ogólnokształcące** (upper secondary school) in Lodz. These two school partners will allow direct access to the school community and pupils. The consortium will also have direct access to school participants in territories without formal partner schools and through its non-formal school partners.

Concerning the involvement of stakeholders in the multiplier events, the partners have a fluid relationship with relevant stakeholders, such as secondary schools, primary schools, regional, national and local public administrations, other associations, final beneficiaries, etc.



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WHAT ARE THE ACTIVITIES AND RESULTS OF THE PROJECT?

The activities are developed through six modules:

1. Coordination and management.

2. Dissemination and exploitation of results.

3. Development of STE(A)M methodology and e-learning technologies. It will include:

- Development of an **interactive digital laboratory system** (e-Lab).

- Development of a **system for the exchange of geolocalized information** in field practices.

- Development of **data integration systems**.

- Development of a **virtual classroom** coupled with the webinar system for telematic classes.

5. Teacher training. It will include:

- Development of **didactic materials** for scientific support and film literacy.

- Design of an **online training pathway** for trainers.

- Elaboration of a **methodological guide for the didactic use of the telematic training system**.

- Training for educators in the Danube Delta**.

- Development and implementation of a **continuous training plan for teachers**.

6. “One Health” Campus for initiation to research and communication. It will include:

- Methodological design of an **e-Lab experience** and training content programme of the pilot: “Science of shellfishing and climate change from hydroecology and parasitology”.

- “One Health” Campus for initiation to research and communication**.

- Evaluation of training results** and incorporation of corrective measures in the training programme.

7. Socio-educational intervention for transfer to society. It will include:

- Establishment of a **Network of sustainable community schools**.

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- Development of **didactic resources** for scientific transfer hosted in the virtual classroom.

- **Promotion of the five community schools** through multiplier events.

- **Strategy for the transfer and exploitation of results.**

Five products and two mobility activities, as well as a multiplier event for schools in each country, will emerge from these action modules.

The five products to be produced are:

- **Platform** for synchronous face-to-face distance learning, with virtual classroom. Coord. CESGA.

- A set of **e-learning resources**. Coord. Uaveiro.

- **Training itinerary** with methodological guide for teachers. Coord. USC.

- **Training programme** “One Health Campus for initiation to research and communication” for students. Coord. Agrupamento de Escolas de Aveiro.

- **Didactic resources for scientific transfer to society**. Coord. Concello de Outes.

The two mobility activities are:

- **Training for educators in the Danube Delta** (Universitatea Alexandru Ioan Cuza din Iasi).

- **“One Health” Campus for initiation to research and communication in Aveiro** (Agrupamento de Escolas de Aveiro).



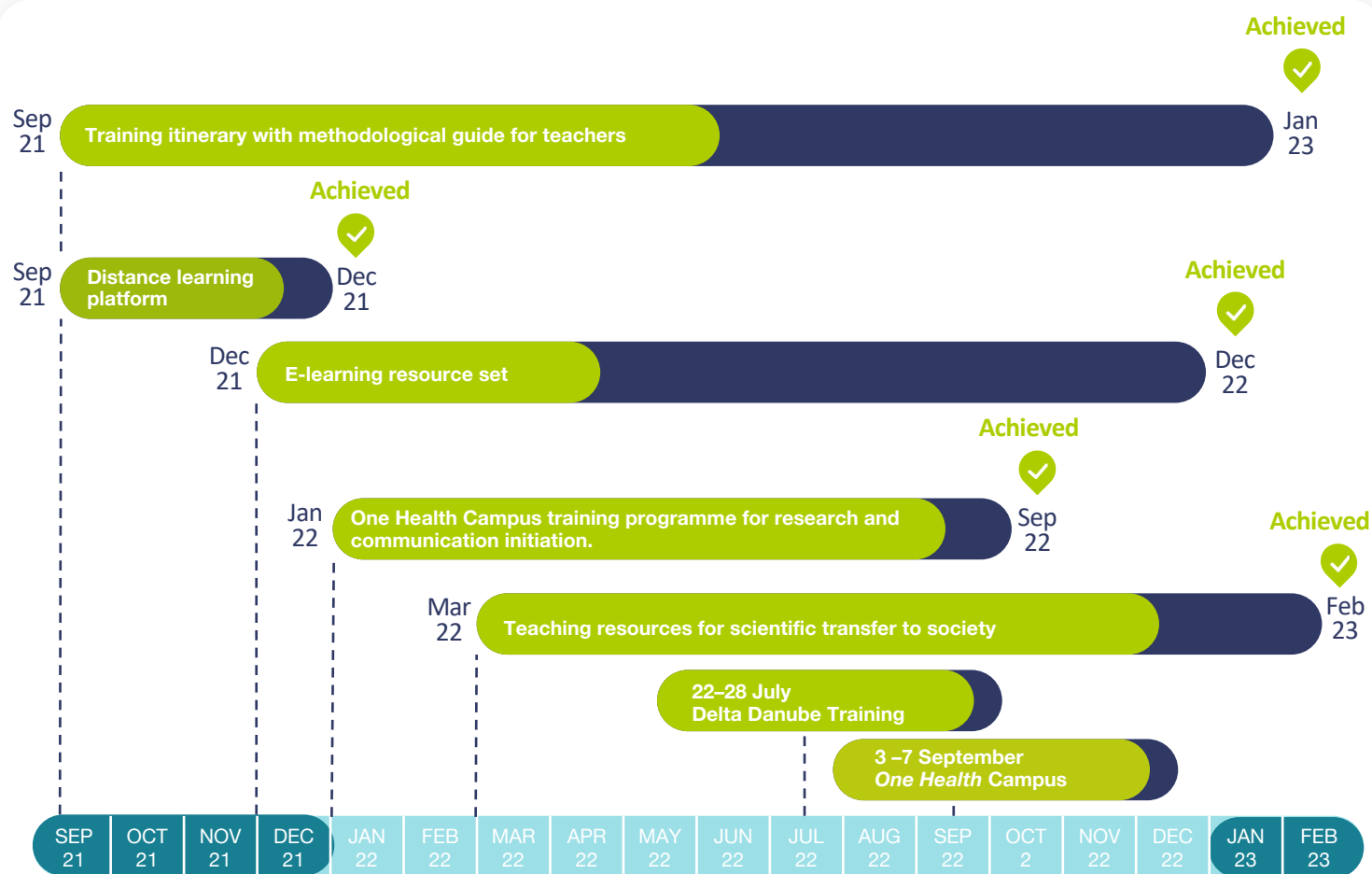
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WHAT IS THE TIMETABLE FOR ITS DEVELOPMENT?

The project started on 1 March 2021 and will end on 28 February 2023.

Its timetable will develop over the academic years 2021-2022 and 2022-2023:



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WHAT WERE THE RESULTS OF THE EVALUATION?

This **proposal** was the **most highly rated** one of the 23 applications funded out of an evaluation of around 500 applications. It was conceded 92 points out of 100 with the following scores: *relevance* (30 points), *quality of project design and implementation* (14 points), *quality of the project team and partnership arrangements* (19 points), *impact and dissemination* (29 points).

The evaluation report highlights that the project aims to **promote digital and scientific learning in the academic curriculum, taking advantage of the benefits of augmented reality to make up for the impossibility of a tangible empirical experience**. It envisages the production of five intellectual results: a platform for synchronous face-to-face distance classes, with a virtual classroom; a set of e-learning resources; a training pathway with a methodological guide for teachers; a training programme (“One Health Campus for initiation to research and communication”) for students; and the development of teaching resources for scientific transfer to society. Numerous strengths stand out. **It is aligned with the priorities of the KA226 action, with a marked innovative and transnational character**. The objectives are precise and are based on well-defined needs, being able to establish intersectoral and intergenerational cooperation links.

The work plan is described comprehensively, sequencing the different phases together with effective monitoring and control measures. The contribution of the activities to the achievement of the objectives is clearly perceived, by means of an appropriate methodology and well-defined contents, with the participants taking the lead. Thus, in the mobilities, a correct selection procedure is advocated, both for students and teachers, based on their involvement in the project and prioritising people with fewer opportunities. Relevant tools for the validation of the learning process are also provided.

Its team demonstrates a positive balance of competencies and tasks are assigned in a balanced and consistent manner according to the skills and experience of each member, with the collaboration of non-formal partners. Both the communication mechanisms and the frequency of interactions are highly operational. The addition of a first-time partner will help to enhance its internationalisation. The proposal is expected to have a considerable impact on a variety of areas and personnel, and a well-designed evaluation plan that includes a variety of actors, moments, instruments, criteria and indicators stands out. The strategies for dissemination of results are also excellent, and the sustainability of the project is assured.

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